

33

RCA-33

POWER AMPLIFIER PENTODE

Filament	Coated	
Voltage	2.0	d-c volts
Current	0.260	amp.
Direct Interelectrode Capacitances:		
Grid to Plate	1.0	μμf
Input	8.0	μμf
Output	12.0	μμf
Maximum Overall Length		4-11/16"
Maximum Diameter		1-13/16"
Bulb		ST-14
Base		Medium 5-Pin

Pin 1-Filament +
Pin 2-Plate
Pin 3-Grid
Pin 4-Screen
Pin 5-Filament -

BOTTOM VIEW

AMPLIFIER (Class A)

Operating Conditions and Characteristics:

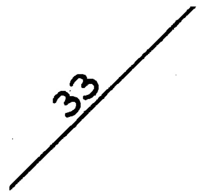
Filament	2.0	2.0	d-c volts
Plate	135	180 max.	volts
Screen	135	180 max.	volts
Grid	-13.5	-18	volts
Amp. Fact.	70	90	approx.
Plate Res.	50000	55000	approx. ohms
Mut. Cond.	1450	1700	μmhos
Plate Cur.	14.5	22	ma.
Screen Cur.	3	5	ma.
Load Res.	7000	6000	ohms
P.O.°	0.7	1.4	watts

° 7% total harmonic distortion.

If a single 33 is self-biased, the self-biasing resistor (770 ohms for 135 volts, or 670 ohms for 180 volts) should be shunted by a suitable filter network to avoid degenerative effects at low audio frequencies. With two 33's in push-pull, the filter network may be omitted across the resistor (one-half of the values for a single tube).

Transformer or impedance input-coupling devices are recommended. If, however, resistance coupling is employed the grid resistor with self-bias should not exceed one megohm: without self-bias, it should be limited to 0.5 megohm.

RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.





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AVERAGE CHARACTERISTICS

AVERAGE CHARACTERISTICS

TYPE 33
E_f=2.0 VOLTS D.C.

CURVE	PLATE VOLTS	SCREEN VOLTS
———	135	135
- - - -	180	180

PLATE RESISTANCE (r_p) THOUSANDS OF OHMS
AMPLIFICATION FACTOR (μ)
MUTUAL CONDUCTANCE (g_m) MICROMHOS
CONTROL GRID VOLTS

92S-5170R1

AVERAGE OUTPUT CHARACTERISTICS

TYPE 33
E_f=2.0 VOLTS D.C.
GRID VOLTS=-18
PLATE VOLTS=180
SCREEN VOLTS=180

POWER OUTPUT
TOTAL HARMONICS
2ND HARMONIC
3RD HARMONIC

$$\text{TOTAL}=\sqrt{(\%\,2\text{ND})^2+(\%\,3\text{RD})^2}$$

HARMONICS-PER CENT
POWER OUTPUT-WATTS
LOAD RESISTANCE-OHMS

92S-5533

SEPT. 30, 1936

92S-5170R1
92S-5533



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AVERAGE PLATE CHARACTERISTICS

E_f=2.0 VOLTS D.C.

SCREEN VOLTS=180

CONTROL-GRID VOLTS E_{c1}=0

-5

-10

-15

-18

E_{c1}=-20

-25

-30

-35

-36

LOAD RESISTANCE 6000 OHMS

PLATE VOLTS

0 50 100 150 200 250 300 350 400

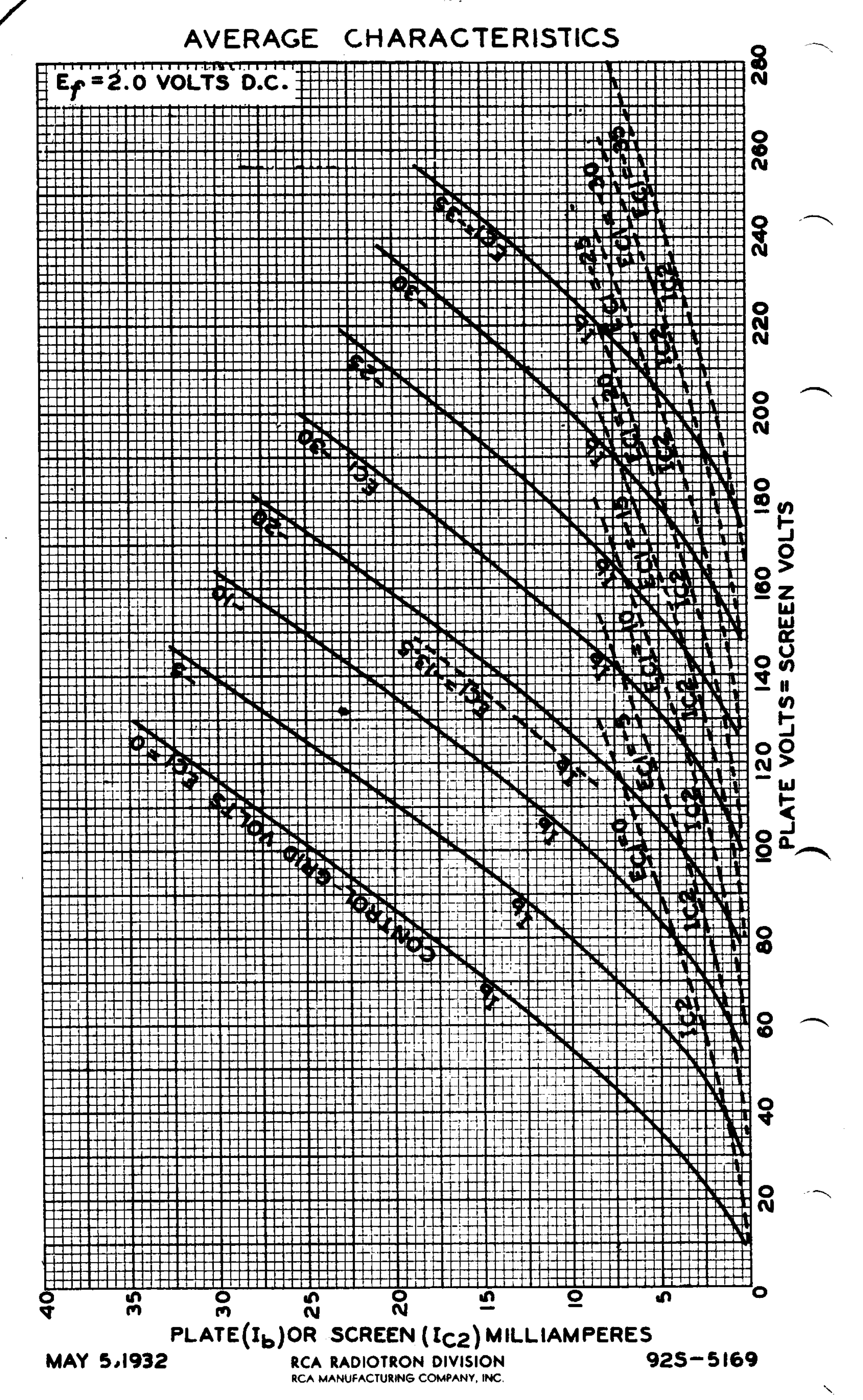
PLATE MILLIAMPERES

70 60 50 40 30 20 10 0

JAN. 1, 1934

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92S-5440


33
Cunningham Radiotron
RCA-33
AVERAGE CHARACTERISTICS
Ef = 2.0 VOLTS D.C.
CONTROL-GRID VOLTS
ECI = 0
ECI = -5
ECI = -10
ECI = -13.5
ECI = -15
ECI = -20
ECI = -25
ECI = -30
ECI = -35
Ib
IC2
PLATE VOLTS = SCREEN VOLTS
PLATE (Ib) OR SCREEN (IC2) MILLIAMPERES
40 35 30 25 20 15 10 5 0
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280
MAY 5, 1932
RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.
92S-5169